



## Preliminary spatiotemporal analysis of the association between socio-environmental factors and suicide

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### Abstract:

**BACKGROUND:** The seasonality of suicide has long been recognised. However, little is known about the relative importance of socio-environmental factors in the occurrence of suicide in different geographical areas. This study examined the association of climate, socioeconomic and demographic factors with suicide in Queensland, Australia, using a spatiotemporal approach. **METHODS:** Seasonal data on suicide, demographic variables and socioeconomic indexes for areas in each Local Government Area (LGA) between 1999 and 2003 were acquired from the Australian Bureau of Statistics. Climate data were supplied by the Australian Bureau of Meteorology. A multivariable generalized estimating equation model was used to examine the impact of socio-environmental factors on suicide. **RESULTS:** The preliminary data analyses show that far north Queensland had the highest suicide incidence (e.g., Cook and Mornington Shires), while the south-western areas had the lowest incidence (e.g., Barcoo and Bauhinia Shires) in all the seasons. Maximum temperature, unemployment rate, the proportion of Indigenous population and the proportion of population with low individual income were statistically significantly and positively associated with suicide. There were weaker but not significant associations for other variables. **CONCLUSION:** Maximum temperature, the proportion of Indigenous population and unemployment rate appeared to be major determinants of suicide at a LGA level in Queensland.

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### Resource Description

#### Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

#### Exposure :

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

**Temperature:** Fluctuations

#### Geographic Feature:

# Climate Change and Human Health Literature Portal

resource focuses on specific type of geography

None or Unspecified

## **Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Australasia

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Injury, Mental Health/Stress

**Mental Health Effect/Stress:** Mood Disorder

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Model/Methodology:**

type of model used or methodology development is a focus of resource

Outcome Change Prediction

**Population of Concern:** A focus of content

## **Population of Concern:**

populations at particular risk or vulnerability to climate change impacts

Racial/Ethnic Subgroup

**Other Racial/Ethnic Subgroup:** Indigenous Australians

## **Resource Type:**

format or standard characteristic of resource

Research Article

## **Timescale:**

time period studied

Short-Term (

## **Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content